



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/318,268 05/25/99 MATSUMOTO

H Q54505

EXAMINER

MM92/0214

SUGHRUE MION ZINN MACPEAK & SEAS PLLC
2100 PENNSYLVANIA AVENUE NW
WASHINGTON DC 20037-3202

~~MOULTLET-B~~
ART UNIT

PAPER NUMBER

2853
DATE MAILED:

02/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/318,268

Applicant(s)

MATSUMOTO ET AL.

Examiner

Blaise L Mouttet

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☒ Claim(s) 2, 7, 8, 16, 18, 22, 23, 27-32 and 35 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on 17 August 1999 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on August 17, 1999. These drawings are acceptable.

Specification

2. The disclosure is objected to because of the following informalities:
 - On page 2, line 15 "memory device" should read --a memory device--.
 - On page 2, line 18 "these" should read --this--.
 - On page 9, line 23 "for causing" should be deleted.
 - In the description of the flowchart of figure 6 there is no reference to symbols E, I and J.
 - In the description of the flowchart in figure 8 there is no reference to symbol N.

Appropriate correction is required.

Claim Objections

3. Claims 2, 7, 8, 16, 18, 22, 23, 27-32 and 35 are objected to because of the following informalities of syntax and idiomatic English:
 - In claim 2, lines 2 "the number of reproduction time" should read --the number of reproduction times--.
 - In claim 7, line 2 "final ink end" should read --final ink depletion--.

Art Unit: 2853

- In claim 8, lines 2-3 "an environment of use of the ink cartridge." should read --an environment in which the ink cartridge is used.--
- In claim 16, line 3 "the amount of drawing of the ink" should read --the amount of ink drawn--.
- In claim 18, line 3 "ink end" should read --ink depletion--.
- In claim 22, line 4 "causes to display" should read --displays--.
- In claim 23, lines 3-4 "ink end" should read --ink depletion--.
- In claim 27, line 5 "memory device" should read --a memory device--.
- Claim 29, line 3 should read "a cartridge cleaning device[,] and an ink injecting device."
- In claim 35, line 4 "causes to display" should read --displays--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-5, 13, 21-23, 31 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the reproduction of the ink cartridge" in line 3.

There is insufficient antecedent basis for this limitation in the claim. This rejection would be overcome if "the" were changed to --a--.

Claim 13 recites the limitation "the residual ink amount" in line 11. There is insufficient antecedent basis for this limitation in the claim. This rejection would be overcome if "the" were changed to --a --.

Claim 21, line 3, claim 22, lines 2-3 and claim 35, lines 2-3 recite the limitation "the next reproduction". There is insufficient antecedent basis for this limitation in the claims. This rejection would be overcome if the limitation were amended to read --a next reproduction--.

Claim 31 recites the limitation "said cleaning means" in line 3. There is insufficient antecedent basis for this limitation in the claim. This rejection would be overcome by deleting "said".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-7, 9-19, 21-22, 27-28, 30 and 33-35 are rejected under 35

U.S.C. 102(e) as being anticipated by Cowger et al. US 5,788,388.

Cowger et al. shows an ink cartridge (12) for an ink jet type printing apparatus (10) having a print head (32), the ink cartridge comprising

a container (16) having an ink chamber (14) for containing ink;

Art Unit: 2853

an ink supply port (34, figure 3) for ejecting the ink from the ink chamber (14) to the print head (32);

a memory device (20) for storing data related to the history of the ink cartridge including data related to the number of reproduction times of the ink cartridge (column 7, lines 1-7), data related to a maintenance processing required for reproduction, data related to a condition of cleaning, data related to replacement of ink in the ink cartridge, data related to a time of final use of the ink cartridge, data related to ink depletion in the ink cartridge, data indicating the date of manufacture of the ink cartridge, data indicative of a lifetime of the ink cartridge and data related to a preset minimum amount of ink to be contained in the ink cartridge and said memory device having an area in which the data is stored in a rewritable manner (column 2, lines 30-33, column 5, lines 22-33); and

a control device (24) accessible to said memory device (20) for controlling the print head (32) in accordance with data supplied from the exterior of the print head, the control device controlling a charging of the ink into the printhead in accordance with the data stored in the memory device (20) when the ink cartridge (12) is attached to the printing apparatus (10) (column 4, lines 41-65) and judges from the data whether a next reproduction is possible using a reproduction processing apparatus (column 6, line 63 – column 7, line 7) and displays a signal if reproduction is impossible (column 4, lines 55-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 8, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowger et al. US 5,788,388 in view of Childers et al. US 6,161,913.

Cowger et al. fails to show that the data stored in the memory device includes data related to an environment in which the ink cartridge is used.

Childers et al. shows storing an air accumulation parameter in memory to determine the lifetime of a print head (column 2, lines 1-7).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to store an air accumulation parameter as taught by Childers et al. in the memory device of Cowger et al. and have the control device of Cowger et al.

Art Unit: 2853

judge whether or not a next reproduction of the print cartridge is possible on the basis of the environmental data.

The motivation for doing so would have been that air accumulating within an ink chamber diminishes the life expectancy of an ink chamber as taught by column 3, lines 8-18 of Childers et al.

7. Claims 24-26, 29, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowger et al. US 5,788,388 in view of Emanuel US 6,036,304.

Cowger et al. shows all of the elements of claim 24 common to claim 13.

Cowger et al. teaches, regarding claims 29 and 32, that the reproduction processing apparatus includes an ink injection device (column 6, line 63 – column 7, line 7).

Cowger et al. fails to show that the control device judges whether a cleaning operation is necessary in accordance with the stored data and executes the cleaning operation or a brief cleaning operation, using a cartridge cleaning device, based on the relative value of the residual ink, the minimum ink value, and an amount of ink consumed by the cleaning.

Emanuel shows a cleaning device (50) that cleans out residual ink when an ink cartridge is changed (column 4, lines 29-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, regarding claims 24, 29 and 32, to use the control device in the printing apparatus of Cowger et al. to control a cartridge cleaning device to clean out

Art Unit: 2853

residual ink as taught by Emanuel when using the reproduction processing apparatus taught by Cowger et al.

The motivation for doing so would have been to avoid contamination by inks of different colors as taught by column 4, lines 29-41 of Emanuel.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, regarding claims 25, 26 and 31, to execute the cleaning operation when the residual ink is at a first amount greater than the sum of the preset minimum amount of ink and an amount of ink consumed in the cleaning operation and execute a brief cleaning operation when the residual ink is at a second amount less than the first amount but greater than the preset minimum value.

The motivation for doing so would have been in order to avoid the "ink depleted" signal which would interrupt printing operation as taught by column 2, lines 30-33 of Cowger et al.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet whose telephone number is (703) 305-3007. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow, Jr. Art Unit 2853, can be reached on (703) 308-3126. The

Application/Control Number: 09/318,268

Page 9

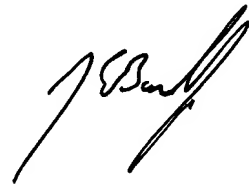
Art Unit: 2853

fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet 1/31/2001

BM 1/31/2001



John Barlow
Supervisory Patent Examiner
Technology Center 2800